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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,772	07/30/2002	Markus Fleute	Fleute-1	2310
28581	7590	03/03/2006	EXAMINER	
DUANE MORRIS LLP			PATEL, SHEFALI D	
PO BOX 5203			ART UNIT	
PRINCETON, NJ 08543-5203			PAPER NUMBER	
			2621	
DATE MAILED: 03/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/088,772	Applicant(s) FLEUTE ET AL.	
	Examiner Shefali D. Patel	Art Unit 2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment was received on 12 December 2005.
2. Claims 2-3 are cancelled.
3. The proposed drawings corrections have been accepted.
4. Please note the new claims objection below.

### *Response to Arguments*

5. Applicant's arguments with respect to claims 1-20 (Remarks on pages 6-8) filed on 12 December 2005 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Objections*

6. Claim 1 is objected to because of the following informalities: Claim 1 lines 10-12 are difficult to read. Perhaps it is the use of comma “,” that needs to be modified. It recites “iteratively, ... , to obtain a correspondence between the model and the image.” This is unclear. Iteratively performing what to obtain a correspondence? Please clarify this. Appropriate correction is required.
7. Claims 13-20 are objected to because of the following informalities: Claims 13-20 depends on the cancelled claims 2 and 3. Please have these claims depend on the non-cancelled claims. Please note that if, for example, both claims 13 and 14 depend on claim 1, they will both (claims 13 and 14) recite the same limitations. It is applied to claims 15-16, 17-18 and 19-20 as well. Also, claims 13 and 14 recite the same limitations as claim 4; claims 15 and 16 recite the same limitations as claim 6; claims 17 and 18 recite the same limitations as claim 7; and claims 19 and 20 recite the same limitations as claim 9.

**Appropriate correction is required.**

### *Claim Rejections - 35 USC § 102*

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1 and 4-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Sheehan et al. (hereinafter, "Sheehan") (US 6,106,466).

With regard to **claim 1** Sheehan discloses a method for restoring a three-dimensional image representing the surface contours of at least one object, based on at least one two-dimensional x-ray view of this object, the method (figures 1-2 and also, col. 5 lines 7-40) comprising the steps of: determining the position of the shooting source in a reference referential system (col. 7 line 67 to col. 8 lines 1-5, 11-12, 43-46, 50-53, also, col. 11 lines 25-47); selecting at least one statistical model (col. 12 lines 8-11) defining an average shape of the object and its main deformations with respect to this average shape, the statistical model being calculated from an object population of a same type for which the statistical correspondence common to all objects is searched (col. 12 lines 14-45); and iteratively (Figure 13), until the contours of the model are such that the intervals between back-projection rays of the image contours in two dimensions from the source and the model surface are minimum, to obtain a correspondence between the model and the image (col. 12 lines 53-66, col. 15 lines 11-13); selecting an orientation and a position of the model in the reference referential system by submitting the statistical model, successively, to a rigid transformation modifying its position and/or its orientation, (col. 15 lines 23-45) then selecting a deformation of the model to modify its contours in three dimensions, by submitting the statistical model to a non-rigid deformation modifying its surface contours (col. 15 lines 46-65, col. 16 line 50 to col. 17 lines 1-34).

With regard to **claim 4** Sheehan discloses the image contours in two dimensions are automatically obtained by projecting the model in the image plane in two dimensions and by deforming the projected

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contours to have them coincide with the points of strong grey level gradient of the two-dimensional image (col. 4 lines 11-15 and col. 16 lines 34-39).

With regard to **claim 5** Sheehan discloses automatic determination of the image contours in two dimensions is performed iteratively, each iteration being interposed between two successive iterations of the selection steps (Figures 3-6 and 13).

With regard to **claim 6** Sheehan discloses additional reference points for the iterative position, orientation, and deformation selection steps (col. 11 lines 41-42 and 65-67, col. 13 lines 3-10 and 61-65).

With regard to **claim 7** Sheehan discloses of using several two-dimensional images for which the respective positions of the shooting source are all determined the reference referential system, and of performing the iterative selection steps while taking account of the back-projection rays of the contours of all the two-dimensional image (see Figure 13 for iterative steps for doing so).

With regard to **claim 8** Sheehan discloses number of used images is a function of the desired accuracy at col. 9 lines 37-67 for multiple media.

With regard to **claim 9** Sheehan discloses the model surface formed of triangle elements (as seen in Figure 8 and at col. 12 lines 50-55).

With regard to **claim 10** Sheehan discloses restoring of the surface contours of several objects linked together by rigid and/or resilient transformation relations (col. 12 lines 46-61).

With regard to **claim 11** Sheehan discloses bone images (col. 8 lines 22-27).

**Claim 12** recites identical features as claim 1 except claim 12 is a system claim. Thus, arguments similar to that presented above for claim 1 is equally applicable to claim 12. See the system of Sheehan in Figure 2.

**Claim 13** recites identical features as claim 4. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 13.

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**Claim 14** recites identical features as claim 4. Thus, arguments similar to that presented above for claim 4 is equally applicable to claim 14.

**Claim 15** recites identical features as claim 6. Thus, arguments similar to that presented above for claim 6 is equally applicable to claim 15.

**Claim 16** recites identical features as claim 6. Thus, arguments similar to that presented above for claim 6 is equally applicable to claim 16.

**Claim 17** recites identical features as claim 7. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 17.

**Claim 18** recites identical features as claim 7. Thus, arguments similar to that presented above for claim 7 is equally applicable to claim 18.

**Claim 19** recites identical features as claim 9. Thus, arguments similar to that presented above for claim 9 is equally applicable to claim 19.

**Claim 20** recites identical features as claim 9. Thus, arguments similar to that presented above for claim 9 is equally applicable to claim 20.

### *Conclusion*

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shefali D. Patel whose telephone number is 571-272-7396. The examiner can normally be reached on M-F 8:00am - 5:00pm (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shefali D Patel  
Examiner  
Art Unit 2621

23 February 2006

JINGGE WU  
PRIMARY EXAMINER

